DLOC Precursor IC 5.3: Practice Exercise #5

Directions: Choose the lettered answer that best completes the question. There is only one correct answer for each question unless indicated otherwise.

1. Identify two situations where significant sidelobe contamination is most likely to occur (2 answers are correct).

a. The radar is scanning through widespread light to moderate precipitation in the mid-levels.
b. A strong surface-based inversion exists and the radar is scanning at 0.5° elevation.
c. Strong, isolated storms exist at a range of 150 nm from the radar.
d. The radar is scanning through an intense convective storm with a large reflectivity gradient that is close to the radar.

2. Select the three (3) correct answers for each type of atmospheric refractive condition. (Hint: draw a picture of standard, subrefraction, and superrefraction.)

_____ Subrefraction _____ Superrefraction

a. Occurs when the beam passes through a strong inversion with moisture decreasing with height.
b. Targets will be displayed at a **lower** height than their **true** height.
c. Occurs when the beam passes through a dry adiabatic layer with moisture increasing with height.
d. Targets will be displayed at a **higher** height than their **true** height.
e. Increases ground clutter contamination on lower elevation slices.
f. Decreases ground clutter contamination on lower elevation slices.

3. A 55 dBZ core is located between 5,000 and 15,000 ft above sea level at a range of 85 nm from radar "A" and 115 nm range from radar "B". Both radars are located at sea-level and are scanning at 0.5° elevation under standard refractive conditions. Choose the correct statement.

a. Radar "A" will display the target as 55 dBZ at 9,000 ft. Radar "B" will display the target as 55 dBZ at 15,000 ft.
b. Radar "A" will display the target as 55 dBZ at 9,000 ft. Radar "B" will display the target as less than 55 dBZ at 15,000 ft.
c. Radar "A" will display the target as less than 55 dBZ at 15,000 ft. Radar "B" will display the target as 55 dBZ at 9,000 ft.
d. Radar "A" will display the target as less than 55 dBZ at 15,000 ft. Radar "B" will display the target as less than 55 dBZ at 9,000 ft.

4. The best range resolution for all WSR-88D radars is approximately _____ in short pulse mode and _____ in long pulse mode.

a. 250 feet, 750 feet
b. 500 feet, 1500 feet
c. 250 meters, 750 meters
d. 500 meters, 1500 meters

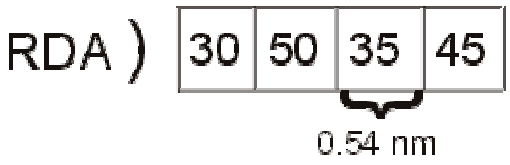
5. Choose the correct display **resolutions** and corresponding maximum displayable **ranges** for the Base Reflectivity products.

a. 0.13 nm resolution and 32 nm range; 0.27 nm resolution and 62 nm range; 0.54 nm resolution and 124 nm range.
b. 0.13 nm resolution and 124 nm range; 0.27 nm resolution and 248 nm range; 0.54 nm resolution and 248 nm range.
c. 0.54 nm resolution and 32 nm range; 1.1 nm resolution and 62 nm range; 2.2 nm resolution and 124 nm range.
d. 0.54 nm resolution and 124 nm range; 1.1 nm resolution and 248 nm range; 2.2 nm resolution and 248 nm range.

6. Choose the correct display **resolutions** and corresponding maximum displayable **ranges** for the Base Velocity and Spectrum Width products.

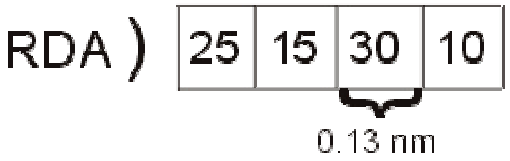
a. 0.54 nm resolution and 32 nm range; 1.1 nm resolution and 62 nm range; 2.2 nm resolution and 124 nm range.
b. 0.54 nm resolution and 124 nm range; 1.1 nm resolution and 248 nm range; 2.2 nm resolution and 248 nm range.
c. 0.13 nm resolution and 32 nm range; 0.27 nm resolution and 62 nm range; 0.54 nm resolution and 124 nm range.
d. 0.13 nm resolution and 124 nm range; 0.27 nm resolution and 248 nm range; 0.54 nm resolution and 248 nm range.

7. Given the following dBZ values along a radial at 0.54 nm resolution, which value would be displayed in the same location on a 2.2 nm resolution Base Reflectivity product?



a. 30
b. 50
c. 40
d. 45

8. Given the following radial velocity values along a radial at 0.13 nm resolution, which value would be displayed in the same location on a 0.54 nm resolution Base Velocity product?



a. 30
b. 20
c. 10
d. 25